IN THE CLAIMS:

1. (Original) A composition of matter comprising a hydride ion having a binding energy greater than 0.8 eV.

2. (Original) A composition of claim 1 wherein the binding energy is about 3 eV.

3. (Original) A composition of claim 1 wherein the binding energy is about 7 eV.

4. (Original) A composition of claim 1 wherein the binding energy is about 11 eV.

5. (Original) A composition of claim 1 wherein the binding energy is about 17 eV.

6. (Original) A composition of claim 1 wherein the binding energy is about 23 eV.

7. (Original) A composition of claim 1 wherein the binding energy is about 29 eV.

8. (Original) A composition of claim 1 wherein the binding energy is about 36 eV.

9. (Original) A composition of claim 1 wherein the binding energy is about 43 eV.

10. (Original) A composition of claim 1 wherein the binding energy is about 49 eV.

11. (Original) A composition of claim 1 wherein the binding energy is about 55 eV.

12. (Original) A composition of claim 1 wherein the binding energy is about 61 eV.

13. (Original) A composition of claim 1 wherein the binding energy is about 66 eV.

14. (Original) A composition of claim 1 wherein the binding energy is about 69 eV.

15. (Original) A composition of claim 1 wherein the binding energy is about 71 eV.

16. (Original) A composition of claim 1 wherein the binding energy is about 72 eV.

17. (Original) A composition of matter comprising a compound comprising at least one increased binding energy hydrogen species selected from the group consisting of:

an increased binding energy hydride ion having a binding energy greater than 0.8 eV,

an increased binding energy hydrogen atom having a binding energy of about $13.6/n^2$ eV,

an increased binding energy hydrogen molecule having a first binding energy of about $15.5/n^2$ eV, and

an increased binding energy molecular hydrogen ion having a first binding energy of about $16.4/n^2$ eV,

wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1.

18. (Original) A composition of claim 17 wherein the compound further comprises one or more cations.

19. (Original) A composition of claim 18 wherein the cation is a proton.

20. (Original) A composition of claim 18 wherein the cation is the ion H_3^+.

21. (Original) A composition of claim 17 wherein the compound further comprises one or more normal hydrogen atoms.

22. (Original) A composition of claim 17 wherein the compound further comprises one or more normal hydrogen molecules.

23. (Original) A composition of claim 17 wherein the compound has a formula selected from the group of formulae consisting of MH, MH_2, and M_2H_2 wherein M is an alkali cation and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

24. (Original) A composition of claim 17 wherein said compound has the formula MH_n wherein n is 1 or 2, M is an alkaline earth cation and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

25. (Original) A composition of claim 17 wherein the compound has the formula MHX wherein M is an alkali cation, X is one of a neutral atom, a molecule, or a singly negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

26. (Original) A composition of claim 17 wherein the compound has the formula MHX wherein M is an alkaline earth cation, X is a single negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

27. (Original) A composition of claim 17 wherein the compound has the formula MHX wherein M is an alkaline earth cation, X is a doubly negatively charged anion, and H is said increased binding energy hydrogen atom.

28. (Original) A composition of claim 19 wherein said compound has the formula M_2HX where M is an alkali cation, X is a singly negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

29. (Original) A composition of claim 17 wherein the compound has the formula MH_n wherein n is an integer from 1 to 5, M is an alkaline cation and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

30. (Original) A composition of claim 17 wherein the compound has the formula M_2H_n wherein n is an integer from 1 to 4, M is an alkaline earth cation and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

31. (Original) A composition of claim 17 wherein the compound has the formula M_2XH_n wherein n is an integer from 1 to 3, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

32. (Original) A composition of claim 17 wherein the compound has the formula $M_2X_2H_n$ wherein n is 1 or 2, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

33. (Original) A composition of claim 17 wherein the compound has the formula M_2X_3H wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

34. (Original) A composition of claim 17 wherein the compound has the formula M_2XH_n wherein n is 1 or 2, M is an alkaline earth cation, X is a doubly negatively charged anion, and the hydrogen content H_n of said compound

comprises at least one said increased binding energy hydrogen species.

35. (Original) A composition of claim 17 wherein the compound has the formula $M_2XX'H$ wherein M is an alkaline earth cation, X is a singly negatively charged anion, X' is a doubly negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

36. (Original) A composition of claim 17 wherein the compound has the formula $MM'H_n$ wherein n is an integer from 1 to 3, M is an alkaline earth cation, M' is an alkali metal cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

37. (Original) A composition of claim 17 wherein said compound is $MM'XH_n$ wherein n is 1 to 2, M is an alkaline earth cation, M' is an alkali metal cation, X is a singly negatively charged anion, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

38. (Original) A composition of claim 17 wherein said compound is MM'XH where M is an alkaline earth cation, M' is an alkali metal cation, X is a doubly negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

39. (Original) A composition of claim 17 wherein the compound has the formula MM'XX'H wherein M is an alkaline earth cation, M' is an alkali metal cation, X and X' are each a singly negatively charged anion, and H is selected from the group consisting of said increased binding energy hydride ion and said increased binding energy hydrogen atom.

40. (Original) A composition of claim 17 wherein the compound has the formula H_nS wherein n is 1 or 2, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

41. (Original) A composition of claim 17 wherein the compound has the formula $MSiH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

42. (Original) A composition of claim 17 wherein the compound has the formula $MXX'H_n$ wherein

n is an integer from 1 to 5;

M is an alkali or alkaline earth cation;

X is a singly negatively charged anion or a doubly negative charged anion;

X' is selected from the group consisting of Si, Al, Ni, the transition elements, the inner transition elements, and the rare earth elements; and

the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

43. (Original) A composition of claim 17 wherein the compound has the formula $MAlH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

44. (Original) A composition of claim 17 wherein the compound has the formula MH_n wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of the transition elements, the

inner transition elements, rare earth element cations and nickel; and

the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

45. (Original) A composition of claim 17 wherein the compound has the formula $MNiH_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum; and

the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

46. (Original) A composition of claim 17 wherein the compound has the formula MXH_n wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum;

X is selected from the group consisting of the transition elements, the inner transition elements, and rare earth element cations; and

the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

47. (Original) A composition of claim 17 wherein the compound has the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

48. (Original) A composition of claim 17 wherein the compound has the formula Si_2H_n wherein n is an integer from 1 to 8, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen

species.

49. (Original) A composition of claim 17 wherein the compound has the formula SiH_n wherein n is an integer from 1 to 8 and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

50. (Original) A composition of claim 17 wherein the compound has the formula TiH_n wherein n is an integer from 1 to 4 and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

51. (Original) A composition of claim 17 wherein said compound has the formula Al_2H_n wherein n is an integer from 1 to 4 and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

52. (Original) A composition of claim 17 wherein the compound has the formula $MXAlX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negative charged anion, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

53. (Original) A composition of claim 17 wherein the compound has the formula $MXSiX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

54. (Original) A composition of claim 17 wherein the compound has the formula

SiO_2H_n wherein n is an integer from 1 to 6 and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

55. (Original) A composition of claim 17 wherein said the compound has the formula $MSiO_2H_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

56. (Original) A composition of claim 17 wherein the compound has the formula MSi_2H_n wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

57. (Original) A composition of claim 17 wherein the compound has the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n of said compound comprises at least one said increased binding energy hydrogen species.

58. (Original) A composition of any of claims 25, 26, 28, 31, 32 33, 35, 37, 39, 42, and 52 wherein said singly negatively charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, and nitrate ion.

59. (Original) A composition of any of claims 27, 34, 35, 38, 42, and 52 wherein said doubly negative charged anion is elected from the group consisting of carbonate ion and sulfate ion.

60. (Original) A composition of claim 17 wherein said compound is greater than 50 atomic percent pure.

61. (Original) A composition of claim 60 wherein said compound is greater than 90 atomic percent pure.

62. (Previously Presented) A method for preparing a compound comprising at least one increased binding energy hydrogen species selected from the group consisting of an increased binding energy hydride ion having a binding energy greater than 0.8 eV,an increased binding energy hydrogen atom having a binding energy of about $13.6/n^2$ eV,an increased binding energy hydrogen molecule having a first binding energy of about $15.5/n^2$ eV, and an increased binding energy molecular hydrogen ion having a first binding energy of about $16.4/n^2$ eV, wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1, the method comprising:

reacting atomic hydrogen by use of a catalyst having a net enthalpy of reaction of at least m•27 eV, where m is an integer, to produce an atomic hydrogen having a binding energy of about $13.6/n^2$ eV, wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1,

reacting said produced atomic hydrogen with an electron, to produce a hydride ion having a binding energy greater than 0.8 eV, and

reacting said produced hydride ion with one or more cations, thereby producing said compound.

63. (Original) A method of claim 62 further comprising the step of isolating said compound to be substantially pure.

64. (Previously Presented) A method for preparing a compound comprising at least one increased binding energy hydride ion having a binding energy greater than 0.8 eV, the method comprising:

reacting atomic hydrogen by use of a catalyst having a net enthalpy of reaction of at least m•27 eV, where m is an integer, to produce an atomic

hydrogen having a binding energy of about $13.6/n^2$ eV, wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1,

reacting said produced atomic hydrogen with an electron, to produce a hydride ion having a binding energy greater than 0.8 eV, and

reacting said produced hydride ion with one or more cations, thereby producing said compound.

65. (Previously Presented) A compound comprising at least one increased binding energy hydride ion having a binding energy greater than 0.8 eV and at least one other element.

66. (Previously Presented) A compound comprising at least one increased binding energy hydrogen atom having a binding energy of about $13.6/n^2$ eV, wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1 and at least one other element.

67. (Previously Presented) A compound comprising at least one increased binding energy hydrogen molecule having a first binding energy of about $15.5/n^2$ eV, wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1 and at least one other element.

68. (Previously Presented) A compound comprising at least one increased binding energy molecular hydrogen ion having a first binding energy of about $16.4/n^2$ eV, wherein n is a fraction whose numerator is 1 and denominator is an integer greater than 1, and at least one other element.

69. (Previously Presented) A compound comprising at least one hydride ion having a binding energy of about 0.65 eV and at least one other element.

70. (Previously Presented) A compound containing at least one hydride ion formulated from at least one hydrino atom and at least one other element.

71. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound further comprises one or more cations.

72. (Previously Presented) A compound according to claim 71, wherein the cation is a proton.

73. (Previously Presented) A compound according to claim 71, wherein the cation is the ion H_3^+.

74. (Previously Presented) A compound according to any one of claims 65 to 70, wherein said at least one other element comprises at least one selected from the group consisting of ions and compounds containing an increased binding energy species.

75. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound further comprises one or more normal hydrogen atoms.

76. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound further comprises one or more normal hydrogen molecules.

77. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has a formula selected from the group of formulae consisting of MH, MH_2, and M_2H_2 wherein M is an alkali cation and H is selected from the group consisting of increased binding energy hydride ions, hydrino atoms and dihydrino molecules.

78. (Previously Presented) A compound according to any one of claims 65-70,

wherein the compound has the formula MH_n wherein n is 1 or 2, M is an alkaline earth cation and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

79. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MHX wherein M is an alkali cation, X is one of a neutral atom, a molecule, or a singly negatively charged anion, and H is elected from the group consisting of increased binding energy hydride ions and hydrino atoms.

80. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MHX wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

81. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MHX wherein M is an alkaline earth cation, X is a doubly negatively charged anion, and H is a hydrino atom.

82. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2HX wherein M is an alkali cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

83. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MH_n wherein n is an integer from 1 to 5, M is an alkali cation and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

84. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2H_n wherein n is an integer from 1 to 4, M is an alkaline earth cation and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

85. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2XH_n wherein n is an integer from 1 to 3, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

86. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $M_2X_2H_n$ wherein n is 1 or 2, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

87. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2X_3H wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

88. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2XH_n wherein n is 1 or 2, M is an alkaline earth cation, X is a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

89. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $M_2XX'H$ wherein M is an alkaline earth cation, X is a singly negatively charged anion, X' is a doubly negatively charged

anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

90. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MM'H_n$ wherein n is and integer from 1 to 3, M is an alkaline earth cation, M' is an alkali metal cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

91. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound is $MM'XH_n$ wherein n is 1 to 2, M is an alkaline earth cation, M' is an alkali metal cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

92. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound is MM'XH where M is an alkaline earth cation, M' is an alkali metal cation, X is a doubly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

93. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MM'XX'H where M is an alkaline earth cation, M' is an alkali metal cation, X and X' are each a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

94. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula H_nS wherein n is 1 or 2, and the hydrogen content of H_n comprises at least one increased binding energy

hydrogen species.

95. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MSiH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content of H_n comprises at least one increased binding energy hydrogen species.

96. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MXM'H_n$ wherein

n is an integer from 1 to 5;

M is an alkali or alkaline earth cation;

X is a singly negatively charged anion or a doubly negatively charged anion;

M' is selected from the group consisting of Si, Al, Ni, the transition elements, the inner transition elements, and the rare earth elements; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

97. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MAlH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

98. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MH_n wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of the transition elements, the inner transition elements, and the rare earth element cations and nickel; and

the hydrogen content H_n comprises at least one increased binding energy

hydrogen species.

99. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MNiH_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

100. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MM'H_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum;

M' is selected from the group consisting of the transition elements, the inner transition elements, and rare earth element cations; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

101. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

102. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula Si_2H_n wherein n is an integer from 1 to 8, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

103. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula SiH_n wherein n is an integer from 1 to 8, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

104. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula TiH_n wherein n is an integer from 1 to 4, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

105. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula Al_2H_n wherein n is an integer from 1 to 4 and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

106. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MXAlX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

107. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MXSiX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

108. (Previously Presented) A compound according to any one of claims 65 to 70,

wherein the compound has the formula SiO_2H_n wherein n is an integer from 1 to 6 and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

109. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula $MSiO_2H_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

110. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula MSi_2H_n wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

111. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound has the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

112. (Previously Presented) A compound according to claim 79, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

113. (Previously Presented) A compound according to claim 80, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

114. (Previously Presented) A compound according to claim 82, wherein said singly negatively charged anion is selected from the group consisting of halogen ions,

hydroxide ions, hydrogen carbonate ions, and nitrate ions.

115. (Previously Presented) A compound according to claim 85, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

116. (Previously Presented) A compound according to claim 86, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

117. (Previously Presented) A compound according to claim 87, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

118. (Previously Presented) A compound according to claim 89, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

119. (Previously Presented) A compound according to claim 91, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

120. (Previously Presented) A compound according to claim 93, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

121. (Previously Presented) A compound according to claim 96, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

122. (Previously Presented) A compound according to claim 106, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

123. (Previously Presented) A compound according to claim 107, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

124. (Previously Presented) A compound according to claim 81, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

125. (Previously Presented) A compound according to claim 88, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

126. (Previously Presented) A compound according to claim 89, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

127. (Previously Presented) A compound according to claim 92, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

128. (Previously Presented) A compound according to claim 96, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

129. (Previously Presented) A compound according to claim 106, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

130. (Previously Presented) A compound according to claim 107, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

131. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound is greater that 50 atomic percent pure.

132. (Previously Presented) A compound according to any one of claims 65 to 70, wherein the compound is greater that 90 atomic percent pure.

133. (Previously Presented) A compound according to any one of claims 65 to 70, wherein said at least one other element comprises at least one selected from the group consisting of a proton, ordinary hydrogen atom, ordinary hydrogen molecules, ordinary hydrogen molecular ions and ordinary H_3^+.

134. (Previously Presented) A compound according to any one of claims 65 to 70, wherein said at least one other element comprises at least one element selected from the group consisting of alkaline earth metals and alkali metals.

135. (Previously Presented) A compound according to any one of claims 65 to 70, wherein said at least one other element comprises at least one element selected from the group consisting of organic compounds.

136. (Previously Presented) A compound according to any one of claims 65 to 70, wherein said at least one other element comprises at least one element selected

from the group consisting of semiconductors.

137. (Previously Presented) A compound comprising:

(a) at least one neutral, positive or negative increased binding energy hydrogen species having a binding energy:

(i) greater than the binding energy of the corresponding ordinary hydrogen species, or

(ii) greater than the binding energy of any hydrogen species for which the corresponding ordinary hydrogen species is unstable or is not observed because the ordinary hydrogen species' binding energy is less than thermal energies at ambient conditions, or is negative; and

(b) at least one other element, wherein said increased binding energy hydrogen species is selected from the group consisting of H_n, H_n^-, and H_n^+, where n is an integer of 1 to 8, and n is greater than 1 when H has a positive charge.

138. (Previously Presented) A compound according to claim 137, wherein said increased binding energy hydrogen species is selected from the group consisting of (a) a hydride ion having a binding energy greater than the binding energy of the corresponding ordinary hydride ion for p = 2 up to 23 in which the binding energy is represented by

$$\textit{Binding Energy} = \frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$$

where p is an integer greater than 1, s = ½, ħ is Plank's constant bar, μ_0 is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_0 is the Bohr radius, and *e* is the elementary charge; (b) hydrogen atom having a binding energy greater than about 13.6 eV; (c) hydrogen molecule

having a first binding energy greater than about 15.5 eV; and (d) molecular hydrogen ion having a binding energy greater than about 16.4 eV.

139. (Previously Presented) A compound according to claim 137, wherein the increased binding energy species is hydride ion having a binding energy of about 3.0, 6.6, 11.2, 16.7, 22.8 29.3, 36.1, 42.8, 49.4, 55.5, 61.0, 65.6, 69.2, 71.53, 72.4, 71.54, 68.8, 64.0, 56.8, 47.1, 34.6, of 19.2.

140. (Previously Presented) A compound according to claim 137, wherein said increased binding energy hydrogen species is a hydride ion having a binding energy greater than the binding energy of the corresponding ordinary hydride ion for p = 2 up to 23 in which the binding energy is represented by

$$\textit{Binding Energy} = \frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$$

where p is an integer greater than 1, s = ½, ħ is Plank's constant bar, μ_0 is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_0 is the Bohr radius, and *e* is the elementary charge.

141. (Previously Presented) A compound according to claim 137, wherein said increased binding energy hydrogen species is selected from the group consisting of (a) a hydrino atom having a binding energy of about 13.6 eV/(1/p)^2, where p is an integer greater than 1; (b) a hydride ion having a binding energy represented by

$$Binding\ Energy = \frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$$

where p is an integer greater than 1, s = ½, ħ is Plank's constant bar, μ_0 is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_0 is the Bohr radius, and *e* is the elementary charge; (c) a trihydrino molecular ion, H_3^+ (1/p), having a binding energy of about $22.6/(1/p)^2$ eV; (d) an increased binding energy hydrogen molecule having a binding energy of about $15.5/(1/p)^2$ eV; and (e) an increased binding energy hydrogen molecular ion with a binding energy of about $16.4/(1/p)^2$ eV.

142. (Previously Presented) A compound according to claim 141, wherein p is 2 to 200.

143. (Previously Presented) A compound according to claim 137, wherein the compound is greater that 50 atomic percent pure.

144. (Previously Presented) A compound according to claim 137, wherein the compound is greater that 90 atomic percent pure.

145. (Previously Presented) A compound according to claim 137, wherein said increased binding energy hydrogen species is negative.

146. (Previously Presented) A compound according to claim 145, further comprising at least one cation.

147. (Previously Presented) A compound according to claim 146, wherein said cation

is a proton, H_2^+ or H_3^+.

148. (Previously Presented) A compound according to claim 137, wherein said at least one other element comprises at least one selected from the group consisting of a proton, ordinary hydrogen atom, ordinary hydrogen molecules, ordinary hydrogen molecular ions and ordinary H_3+.

149. (Previously Presented) A compound according to claim 137, wherein said at least one other element comprises at least one element selected from the group consisting of alkaline earth metals and alkali metals.

150. (Previously Presented) A compound according to claim 137, wherein said at least one other element comprises at least one element selected from the group consisting of organic compounds.

151. (Previously Presented) A compound according to claim 137, wherein said at least one other element comprises at least one element selected from the group consisting of semiconductors.

152. (Previously Presented) A compound according to claim 137, wherein the compound has a formula selected from the group of formulae consisting of MH, MH_2, and M_2H_2 wherein M is an alkali cation and H is selected from the group consisting of increased binding energy hydride ions, hydrino atoms and dihydrino molecules.

153. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MH_n wherein n is 1 or 2, M is an alkaline earth cation and H is selected from the group consisting of increased binding energy hydride ions and increased binding energy hydrogen species.

154. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MHX wherein M is an alkali cation, X is one of a neutral atom, a molecule, or a singly negatively charged anion, and H is elected from the group consisting of increased binding energy hydride ions and hydrino atoms.

155. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MHX wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

156. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MHX wherein M is an alkaline earth cation, X is a doubly negatively charged anion, and H is a hydrino atom.

157. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2HX wherein M is an alkali cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

158. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MH_n wherein n is an integer from 1 to 5, M is an alkali cation and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

159. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2H_n wherein n is an integer from 1 to 4, M is an alkaline earth cation and the hydrogen content H_n comprises at least one

increased binding energy hydrogen species.

160. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2XH_n wherein n is an integer from 1 to 3, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

161. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $M_2X_2H_n$ wherein n is 1 or 2, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

162. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2X_3H wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

163. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2XH_n wherein n is 1 or 2, M is an alkaline earth cation, X is a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

164. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $M_2XX'H$ wherein M is an alkaline earth cation, X is a singly negatively charged anion, X' is a doubly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

165. (Previously Presented) A compound according to claim 137, wherein the

compound has the formula $MM'H_n$ wherein n is and integer from 1 to 3, M is an alkaline earth cation, M' is an alkali metal cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

166. (Previously Presented) A compound according to claim 137, wherein the compound is $MM'XH_n$ wherein n is 1 to 2, M is an alkaline earth cation, M' is an alkali metal cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

167. (Previously Presented) A compound according to claim 137, wherein the compound is MM'XH where M is an alkaline earth cation, M' is an alkali metal cation, X is a doubly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

168. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MM'XX'H where M is an alkaline earth cation, M' is an alkali metal cation, X and X' are each a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

169. (Previously Presented) A compound according to claim 137, wherein the compound has the formula H_nS wherein n is 1 or 2, and the hydrogen content of H_n comprises at least one increased binding energy hydrogen species.

170. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MSiH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content of H_n comprises at least one increased binding energy hydrogen species.

171. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MXM'H_n$ wherein

n is an integer from 1 to 5;

M is an alkali or alkaline earth cation;

X is a singly negatively charged anion or a doubly negatively charged anion;

M' is selected from the group consisting of Si, Al, Ni, the transition elements, the inner transition elements, and the rare earth elements; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

172. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MAlH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

173. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MH_n wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of the transition elements, the inner transition elements, and the rare earth element cations and nickel; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

174. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MNiH_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

175. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MM'H_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum;

M' is selected from the group consisting of the transition elements, the inner transition elements, and rare earth element cations; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

176. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

177. (Previously Presented) A compound according to claim 137, wherein the compound has the formula Si_2H_n wherein n is an integer from 1 to 8, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

178. (Previously Presented) A compound according to claim 137, wherein the compound has the formula SiH_n wherein n is an integer from 1 to 8, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

179. (Previously Presented) A compound according to claim 137, wherein the

compound has the formula TiH_n wherein n is an integer from 1 to 4, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

180. (Previously Presented) A compound according to claim 137, wherein the compound has the formula Al_2H_n wherein n is an integer from 1 to 4 and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

181. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MXAlX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

182. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MXSiX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

183. (Previously Presented) A compound according to claim 137, wherein the compound has the formula SiO_2H_n wherein n is an integer from 1 to 6 and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

184. (Previously Presented) A compound according to claim 137, wherein the compound has the formula $MSiO_2H_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least

one increased binding energy hydrogen species.

185. (Previously Presented) A compound according to claim 137, wherein the compound has the formula MSi_2H_n wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

186. (Previously Presented) A compound according to claim 137, wherein the compound has the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

187. (Currently Amended) A ~~composition~~ compound according to one of claims 154, 155, 157, 160, 161, 162, 164, 166, 168, 171, 181 and 182, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

188. (Currently Amended) A ~~composition~~ compound according to one of claims 156, 163, 164, 167, 171, 181 and 182, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

189. (Previously Presented) A compound comprising at least one hydride ion having a binding energy of about 0.65 eV and at least one other element.

190. (Previously Presented) A compound comprising at least one hydrino atom and at least one other element.

191. (Previously Presented) A compound comprising at least one dihydrino molecule and at least one other element.

192. (Currently Amended) A compound comprising at least one increased binding energy species and at least one other element.

193. (Previously Presented) A compound according to any one of claims 189 to 192, wherein said at least one other element comprises at least one increased binding energy hydrogen species.

194. (Previously Presented) A compound according to any one of claims 189 to 192, wherein said at least one other element comprises at least one selected from the group consisting of a proton, ordinary hydrogen atom, ordinary hydrogen molecules and ordinary hydrogen molecular ions.

195. (Previously Presented) A compound according to any one of claims 189 to 192, wherein said at least one other element comprises at least one element selected from the group consisting of alkaline earth metals and alkali earth metals.

196. (Previously Presented) A compound according to any one of claims 189 to 192, wherein said at least one other element comprises at least one element selected from the group consisting of organic compounds.

197. (Previously Presented) A compound according to any one of claims 189 to 192, wherein said at least one other element comprises at least one element selected from the group consisting of semiconductors.

198. (Previously Presented) A hydride ion comprising an electron and a hydrino atom having a hydride binding energy represented by

$$Binding\ Energy = \frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$$

where p is an integer greater than 1, s = ½, ħ is Plank's constant bar, μ_0 is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_0 is the Bohr radius, and *e* is the elementary charge.

199. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 3 eV.

200. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 7 eV.

201. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 11 eV.

202. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 17 eV.

203. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 23 eV.

204. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 29 eV.

205. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 36 eV.

206. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 43 eV.

207. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 49 eV.

208. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 55 eV.

209. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 61 eV.

210. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 66 eV.

211. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 69 eV.

212. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 71 eV.

213. (Previously Presented) A hydride ion according to claim 198, wherein the binding energy is about 72 eV.

214. (Previously Presented) A method for making a compound comprising:

reacting hydrino atoms with electrons to produce hydride ions having a

binding energy greater than 0.8 eV; and

reacting said hydride ions with one or more cations, thereby producing said compound.

215. (Previously Presented) A method for making a compound comprising:

reacting hydrino atoms with electrons to produce hydride ions having a binding energy of about 0.65 eV; and

reacting said hydride ions with one or more cations, thereby producing said compound.

216. (Previously Presented) A method for making a compound comprising:

reacting hydrino atoms with electrons to produce hydride ions; and

reacting said hydride ions with one or more cations, thereby producing said compound.

217. (Previously Presented) A method according to any one of claims 214 to 216, further comprising using a proton as the cation.

218. (Previously Presented) A method according to any one of claims 214 to 216, further comprising using H_3^+ as the cation.

219. (Previously Presented) A method according to any one of claims 214 to 216, further comprising using a cation comprising an increased binding energy species.

220. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having a formula selected from the group of formulae consisting of MH, MH_2, and M_2H_2 wherein M is an alkali cation and H is selected from the group consisting of increased

binding energy hydride ions, hydrino atoms and dihydrino molecules.

221. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula MH_n wherein n is 1 or 2, M is an alkaline earth cation and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

222. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula MHX wherein M is an alkali cation, X is one of a neutral atom, a molecule, or a singly negatively charged anion, and H is elected from the group consisting of increased binding energy hydride ions and hydrino atoms.

223. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method has the formula MHX wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

224. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula MHX wherein M is an alkaline earth cation, X is a doubly negatively charged anion, and H is a hydrino atom.

225. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2HX wherein M is an alkali cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

226. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula MH_n wherein n is an integer from 1 to 5, M is an alkali cation and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

227. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2H_n wherein n is an integer from 1 to 4, M is an alkaline earth cation and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

228. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2XH_n wherein n is an integer from 1 to 3, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

229. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $M_2X_2H_n$ wherein n is 1 or 2, M is an alkaline earth cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

230. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2X_3H wherein M is an alkaline earth cation, X is a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

231. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2XH_n wherein n is 1 or 2, M is an alkaline earth cation, X is a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

232. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $M_2XX'H$ wherein M is an alkaline earth cation, X is a singly negatively charged anion, X' is a doubly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

233. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MM'H_n$ wherein n is and integer from 1 to 3, M is an alkaline earth cation, M' is an alkali metal cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

234. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is $MM'XH_n$ wherein n is 1 to 2, M is an alkaline earth cation, M' is an alkali metal cation, X is a singly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

235. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is $MM'XH$ where M is an alkaline earth cation, M' is an alkali metal cation, X is a doubly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

236. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula MM'XX'H where M is an alkaline earth cation, M' is an alkali metal cation, X and X' are each a singly negatively charged anion, and H is selected from the group consisting of increased binding energy hydride ions and hydrino atoms.

237. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula H_nS wherein n is 1 or 2, and the hydrogen content of H_n comprises at least one increased binding energy hydrogen species.

238. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MSiH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content of H_n comprises at least one increased binding energy hydrogen species.

239. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MXM'H_n$ wherein

n is an integer from 1 to 5;

M is an alkali or alkaline earth cation;

X is a singly negatively charged anion or a doubly negatively charged anion;

M' is selected from the group consisting of Si, Al, Ni, the transition elements, the inner transition elements, and the rare earth elements; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

240. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MAlH_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

241. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula MH_n wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of the transition elements, the inner transition elements, and the rare earth element cations and nickel; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

242. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MNiH_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth cations, silicon, and aluminum; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

243. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MM'H_n$ wherein:

n is an integer from 1 to 6;

M is selected from the group consisting of alkali cations, alkaline earth

cations, silicon, and aluminum;

M' is selected from the group consisting of the transition elements, the inner transition elements, and rare earth element cations; and

the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

244. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

245. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula Si_2H_n wherein n is an integer from 1 to 8, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

246. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula SiH_n wherein n is an integer from 1 to 8, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

247. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula TiH_n wherein n is an integer from 1 to 4, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

248. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula

Al_2H_n wherein n is an integer from 1 to 4 and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

249. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MXAlX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

250. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MXSiX'H_n$ wherein n is 1 or 2, M is an alkali or alkaline earth cation, X and X' are each either a singly negatively charged anion or a doubly negatively charged anion, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

251. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula SiO_2H_n wherein n is an integer from 1 to 6 and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

252. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula $MSiO_2H_n$ wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

253. (Previously Presented) A method according to any one of claims 214 to 216,

wherein the method is conducted to produce a compound having the formula MSi_2H_n wherein n is an integer from 1 to 6, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

254. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to produce a compound having the formula M_2SiH_n wherein n is an integer from 1 to 8, M is an alkali or alkaline earth cation, and the hydrogen content H_n comprises at least one increased binding energy hydrogen species.

255. (Previously Presented) A method according to claim 222, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

256. (Previously Presented) A method according to claim 223, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

257. (Previously Presented) A method according to claim 225, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

258. (Previously Presented) A method according to claim 228, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

259. (Previously Presented) A method according to claim 229, wherein said singly negatively charged anion is selected from the group consisting of halogen ions,

hydroxide ions, hydrogen carbonate ions, and nitrate ions.

260. (Previously Presented) A method according to claim 230, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

261. (Previously Presented) A method according to claim 232, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

262. (Previously Presented) A method according to claim 234, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

263. (Previously Presented) A method according to claim 236, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

264. (Previously Presented) A method according to claim 239, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

265. (Previously Presented) A method according to claim 249, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

266. (Previously Presented) A method according to claim 250, wherein said singly negatively charged anion is selected from the group consisting of halogen ions, hydroxide ions, hydrogen carbonate ions, and nitrate ions.

267. (Previously Presented) A method according to claim 224, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

268. (Previously Presented) A method according to claim 231, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

269. (Previously Presented) A method according to claim 232, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

270. (Previously Presented) A method according to claim 235, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

271. (Previously Presented) A method according to claim 239, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

272. (Previously Presented) A method according to claim 249, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

273. (Previously Presented) A method according to claim 250, wherein said doubly negatively charged anion is selected from the group consisting of carbonate ions and sulfate ions.

274. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method conducted to provide a product having greater that 50 atomic percent purity.

275. (Previously Presented) A method according to any one of claims 214 to 216, wherein the method is conducted to provide a product having greater that 90 atomic percent purity.

276. (Previously Presented) A method according to any one of claims 214 to 216, further comprising using a cation comprising at least one selected from the group consisting of a proton, ordinary hydrogen molecular ions, and ordinary H_3^+.

277. (Previously Presented) A method according to any one of claims 214 to 216, further comprising using a cation comprising at least at least one element selected from the group consisting of alkaline earth metals and alkali metals.

278. (Previously Presented) A method according to any one of claims 214 to 216, further comprising using a cation from the group consisting of organic compound ions.

279. (Previously Presented) A method according any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst having a net enthalpy of reaction of at least m27 eV, where m is an integer.

280. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst adapted to provide a resonant absorption with the energy released by said hydrogen atoms when said hydrogen atoms undergo a transition to a lower energy state.

281. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising a salt of rubidium.

282. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising a salt of potassium.

283. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming hydrino atoms from hydrogen atoms by use of a catalyst comprising a salt of titanium.

284. (Previously Presented) A method according to claim 280, wherein said salt of rubidium is selected from the group consisting of RbOH, Rb_2SO_4, Rb_2CO_3, and Rb_3PO_4.

285. (Previously Presented) A method according to claim 281, wherein said salt of potassium is selected from the group consisting of KOH, K_2SO_4, K_2CO_3 and K_3PO_4.

286. (Previously Presented) A method according to claim 281, wherein said salt of potassium is K_2CO_3.

287. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising an ion selected from the group consisting of (Rb^+), (Mo^{2+}), and (Ti^{2+}).

288. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst selected from the group consisting of (Al^{2+}), (Ar^{+}), (Ti^{2+}), (As^{2+}), (Rb^{+}), (Mo^{2+}), (Ru^{2+}), (In^{2+}), and (Te^{2+}).

289. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst capable of providing a net enthalpy of reaction in the range of 26.8 to 28.5 eV.

290. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising at least one pair of ions selected from the group consisting of: (Sn^{4+}, Si^{4+}), (Pr^{3+}, Ca^{2+}), (Sr^{2+}, Cr^{2+}), (Cr^{3+}, Tb^{3+}), (Sb^{3+},Co^{2+}), (Bi^{3+}, Ni^{2+}), (Pd^{2+}, In^{+}), (La^{3+}, Dy^{3+}), (La^{3+}, Ho^{3+}), (K^{+}, K^{+}) , (V^{3+}, Pd^{2+}), (Lu^{3+}, Zn^{2+}), (As^{3+}, Ho^{3+}), (Mo^{5+}, Sn^{4+}), (Sb^{3+}, Cd^{2+}), (Ag^{2+},Ag^{+}), (La^{3+}, Er^{3+}), (V^{4+}, B^{3+}), (Fe^{3+}, Ti^{3+}), (Co^{2+}, Ti^{+}), (Bi^{3+}, Zn^{2+}), (As^{3+}, Dy^{3+}), (Ho^{3+}, Mg^{2+}), (K^{+}, Rb^{+}), (Cr^{3+}, Pr^{3+}), (Sr^{2+}, Fe^{2+}), (Ni^{2+}, Cu^{+}), (Li^{+}, Pb^{2+}), (Sr^{2+}, Mo^{2+}), (Y^{3+}, Zr^{4+}), (Cd^{2+}, Ba^{2+}), (Ho^{3+}, Pb^{2+}), (Eu^{3+}, Mg^{2+}), (Er^{3+}, Mg^{2+}), (Bi^{4+}, Al^{3+}), (Ca^{2+}, Sm^{3+}), (V^{3+}, La^{3+}), (Gd^{3+}, Cr^{2+}), (Mn^{2+}, Ti^{+}), (Yb^{3+}, Fe^{2+}), (Ni^{2+}, Ag^{+}), (Zn^{2+}, Yb^{2+}), (Se^{4+}, Sn^{4+}), (Sb^{3+}, Bi^{2+}), and (Eu^{3+}, Pb^{2+}).

291. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising oxygen in combination with at least one atom selected from the group consisting of Cu, As, Pd, Te, Cs and Pt.

292. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a

catalyst comprising at least one pair selected from the group consisting of: (B, Li^+), (S, Li^+), (Br, Li^+), (Pm^+, Li^+), (Sm^+, Li^+), (Tb^+, Li^+), (Dy^+, Li^+), (Sb^+, H^+) and (Bi^+, H^+).

293. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising at least one pair selected from the group consisting of:

(He 0+ , Co 3+);	(O 1+ , Nd 4+);	(Al 2+ , Cl 5+);
(He 0+ , Ga 3+);	(O 1+ , Tb 4+);	(Al 4+ , Mn 8+);
(Li 0+ , Ni 3+);	(O 2+ , Ne 3+);	(Si 1+ , Mg 2+);
(Li 0+ , Xe 3+);	(O 3+ , Sb 6+);	(Si 1+ , V 2+);
(Li 0+ , Hg 3+);	(O 4+ , Fe 7+);	(Si 1+ , Tc 2+);
(Li 1+ , Na 4+);	(F 0+ , Al 2+);	(Si 1+ , Sn 2+);
(Li 1+ , Y 6+);	(F 0+ , Si 2+);	(Si 1+ , Hf 2+);
(Be 1+ , Bi 6+);	(F 0+ , Fe 2+);	(Si 1+ , Pb 2+);
(Be 2+ , Al 6+);	(F 0+ , Co 2+);	(Si 2+ , Co 3+);
(B 1+ , C 2+);	(F 0+ , Ru 2+);	(Si 2+ , Ga 3+);
(B 1+ , K 2+);	(F 0+ , In 2+);	(Si 2+ , Ge 3+);
(B 1+ , Ho 3+);	(F 0+ , Sb 2+);	(Si 2+ , Tl 3+);
(B 1+ , Er 3+);	(F 0+ , Bi 2+);	(Si 3+ , Ni 6+);
(B 1+ , Tm 3+);	(F 1+ , Sb 4+);	(Si 3+ , Rb 7+);
(B 1+ , Lu 3+);	(F 3+ , Fe 6+);	(Si 4+ , Al 6+);
(C 1+ , N 2+);	(Ne 0+ , Sm 3+);	(P 1+ , Mg 2+);
(C 1+ , V 3+);	(Ne 0+ , Dy 3+);	(P 1+ , Tc 2+);
(C 1+ , Tc 3+);	(Ne 0+ , Ho 3+);	(P 1+ , Sn 2+);
(C 1+ , Ru 3+);	(Ne 0+ , Er 3+);	(P 1+ , Hf 2+);
(C 1+ , Sn 3+);	(Ne 0+ , Lu 3+);	(P 1+ , Pb 2+);
(C 2+ , Mn 4+);	(Ne 1+ , N 3+);	(P 2+ , Ni 3+);
(C 2+ , Co 4+);	(Ne 1+ , K 3+);	(P 2+ , Cd 3+);

(N 0+ , Sr 2+); (N 0+ , La 2+); (N 0+ , Ce 2+); (N 0+ , Pr 2+); (N 0+ , Nd 2+); (N 0+ , Pm 2+); (N 0+ , Sm 2+); (N 0+ , Eu 2+); (N 1+ , O 2+); (N 1+ , Si 3+); (N 1+ , P 3+); (N 1+ , Mn 3+); (N 1+ , Rh 3+); (N 2+ , F 3+); (N 3+ , Br 6+); (O 0+ , Ti 2+); (O 0+ , V 2+); (O 0+ , Nb 2+); (O 0+ , Hf 2+); (O 1+ , Ne 2+); (O 1+ , Ca 3+); (Cl 2+ , Ho 4+); (Cl 2+ , Er 4+); (Cl 3+ , Cl 4+); (Cl 5+ , Ni 6+); (Cl 5+ , Cu 6+); (Cl 5+ , Rb 7+); (Ar 0+ , Ba 2+); (Ar 0+ , Ce 2+);

(Ne 1+ , V 4+); (Ne 2+ , O 4+); (Na 0+ , Al 2+); (Na 0+ , Si 2+); (Na 0+ , Fe 2+); (Na 0+ , Co 2+); (Na 0+ , Ru 2+); (Na 0+ , In 2+); (Na 0+ , Sb 2+); (Na 0+ , Bi 2+); (Na 2+ , Ti 5+); (Na 2+ , Kr 6+); (Na 3+ , Y 7+); (Mg 1+ , Rb 3+); (Mg 1+ , Eu 4+); (Mg 3+ , Ne 5+); (Mg 6+ , Cl 8+); (Al 1+ , Sc 2+); (Al 1+ , Zr 2+); (Al 1+ , Lu 2+); (Al 2+ , S 5+); (Sc 4+ , N 5+); (Ti 2+ , Ar 2+); (Ti 2+ , Mo 3+); (Ti 4+ , O 5+); (Ti 4+ , Zn 6+); (Ti 4+ , As 6+); (V 1+ , Sr 2+); (V 1+ , La 2+);

(P 2+ , Xe 3+); (P 3+ , Nb 5+); (P 5+ , C 5+); (S 1+ , P 2+); (S 1+ , Se 2+); (S 1+ , La 3+); (S 1+ , Ce 3+); (S 1+ , Au 2+); (S 2+ , Sr 3+); (S 2+ , Cd 3+); (S 3+ , Cu 4+); (S 3+ , Rb 4+); (S 4+ , O 4+); (Cl 1+ , C 2+); (Cl 1+ , K 2+); (Cl 1+ , Zr 3+); (Cl 1+ , Eu 3+); (Cl 1+ , Tm 3+); (Cl 2+ , Te 4+); (Cl 2+ , Sm 4+); (Cl 2+ , Gd 4+); (Mn 4+ , Ge 5+); (Fe 1+ , Sc 2+); (Fe 1+ , Y 2+); (Fe 1+ , Yb 2+); (Fe 1+ , Lu 2+); (Fe 2+ , S 3+); (Fe 2+ , Cu 3+); (Fe 2+ , Zn 3+);

(Ar 0+ , Pr 2+);	(V 1+ , Ce 2+);	(Fe 2+ , Br 3+);
(Ar 0+ , Nd 2+);	(V 1+ , Pr 2+);	(Fe 2+ , Zr 4+);
(Ar 0+ , Ra 2+);	(V 1+ , Nd 2+);	(Fe 2+ , Ce 4+);
(Ar 1+ , Ti 3+);	(V 1+ , Pm 2+);	(Fe 5+ , Sr 7+);
(Ar 2+ , C 3+);	(V 1+ , Sm 2+);	(Co 1+ , Mg 2+);
(Ar 3+ , K 4+);	(V 1+ , Eu 2+);	(Co 1+ , Cr 2+);
(Ar 3+ , Br 5+);	(V 2+ , O 2+);	(Co 1+ , Mn 2+);
(Ar 3+ , Mo 5+);	(V 3+ , Mn 4+);	(Co 1+ , Mo 2+);
(Ar 4+ , Y 5+);	(V 3+ , Co 4+);	(Co 1+ , Tc 2+);
(K 1+ , Si 3+);	(V 4+ , Ar 6+);	(Co 1+ , Pb 2+);
(K 1+ , P 3+);	(V 4+ , Sc 5+);	(Co 2+ , Cu 3+);
(K 1+ , Mn 3+);	(V 5+ , Mg 5+);	(Co 2+ , Zn 3+);
(K 1+ , Ge 3+);	(V 6+ , Sc 8+);	(Co 2+ , Br 3+);
(K 1+ , Rh 3+);	(V 6+ , Br 8+);	(Co 2+ , Zr 4+);
(K 1+ , Tl 3+);	(Cr 1+ , Sc 2+);	(Co 2+ , Ag 3+);
(K 2+ , He 2+);	(Cr 1+ , Ti 2+);	(Co 2+ , Ce 4+);
(K 2+ , Si 4+);	(Cr 1+ , Zr 2+);	(Co 2+ , Hf 4+);
(K 2+ , As 4+);	(Cr 1+ , Lu 2+);	(Co 4+ , Nb 6+);
(K 3+ , P 5+);	(Cr 2+ , F 2+);	(Co 5+ , Sc 6+);
(K 3+ , Zr 5+);	(Cr 2+ , Na 2+);	(Ni 1+ , Co 2+);
(K 4+ , Rb 6+);	(Cr 2+ , Se 3+);	(Ni 1+ , Ni 2+);
(K 5+ , Mg 4+);	(Cr 2+ , Pd 3+);	(Ni 1+ , Rh 2+);
(K 5+ , Kr 7+);	(Cr 2+ , I 3+);	(Ni 1+ , Cd 2+);
(K 6+ , Y 8+);	(Cr 2+ , Hg 3+);	(Ni 1+ , Sb 2+);
(Ca 1+ , C 2+);	(Cr 3+ , O 3+);	(Ni 2+ , Ne 2+);
(Ca 1+ , Sm 3+);	(Cr 3+ , Ni 4+);	(Ni 2+ , Ca 3+);
(Ca 1+ , Dy 3+);	(Cr 4+ , O 4+);	(Ni 2+ , Nd 4+);
(Ca 1+ , Ho 3+);	(Cr 5+ , Ne 5+);	(Ni 2+ , Tb 4+);
(Ca 1+ , Er 3+);	(Cr 5+ , Fe 7+);	(Ni 4+ , Rb 6+);

(Ca 1+ , Tm 3+);	(Mn 1+ , V 2+);	(Ni 6+ , Ar 8+);
(Ca 1+ , Lu 3+);	(Mn 1+ , Nb 2+);	(Cu 1+ , Ag 2+);
(Ca 2+ , O 3+);	(Mn 1+ , Sn 2+);	(Cu 1+ , I 2+);
(Ca 2+ , Ni 4+);	(Mn 1+ , Hf 2+);	(Cu 1+ , Cs 2+);
(Ca 3+ , Mn 5+);	(Mn 2+ , Cu 3+);	(Cu 1+ , Au 2+);
(Ca 3+ , Rb 5+);	(Mn 2+ , Zn 3+);	(Cu 1+ , Hg 2+);
(Ca 4+ , Cl 6+);	(Mn 2+ , Br 3+);	(Cu 2+ , Sm 4+);
(Ca 4+ , Ar 6+);	(Mn 2+ , Zr 4+);	(Cu 2+ , Gd 4+);
(Ca 4+ , Sc 5+);	(Mn 2+ , Ce 4+);	(Cu 2+ , Dy 4+);
(Ca 5+ , Y 7+);	(Mn 2+ , Hf 4+);	(Cu 3+ , K 4+);
(Sc 2+ , Ti 4+);	(Mn 3+ , Mg 3+);	(Cu 3+ , Br 5+);
(Sc 2+ , Bi 4+);	(Mn 3+ , Te 5+);	(Cu 3+ , Mo 5+);
(Cu 4+ , Rb 6+);	(Se 1+ , Fe 2+);	(Sr 1+ , Ga 2+);
(Cu 5+ , Mn 7+);	(Se 1+ , Co 2+);	(Sr 1+ , Te 2+);
(Zn 1+ , P 2+);	(Se 1+ , Ge 2+);	(Sr 1+ , Pt 2+);
(Zn 1+ , I 2+);	(Se 1+ , Ru 2+);	(Sr 1+ , Tl 2+);
(Zn 1+ , La 3+);	(Se 1+ , In 2+);	(Sr 2+ , C 3+);
(Zn 1+ , Au 2+);	(Se 1+ , Bi 2+);	(Sr 2+ , Mo 4+);
(Zn 1+ , Hg 2+);	(Se 2+ , Te 3+);	(Sr 3+ , Ar 4+);
(Zn 2+ , Ti 4+);	(Se 3+ , Br 4+);	(Sr 3+ , Sr 4+);
(Zn 2+ , Sn 4+);	(Se 5+ , Y 7+);	(Sr 3+ , Sb 5+);
(Zn 2+ , Bi 4+);	(Br 1+ , P 2+);	(Sr 3+ , Bi 5+);
(Zn 3+ , As 5+);	(Br 1+ , I 2+);	(Sr 4+ , Ar 5+);
(Zn 4+ , Sr 6+);	(Br 1+ , La 3+);	(Sr 4+ , Cu 5+);
(Zn 5+ , Mn 7+);	(Br 1+ , Au 2+);	(Y 2+ , Sr 3+);
(Zn 6+ , Mo 8+);	(Br 3+ , He 2+);	(Y 2+ , Cd 3+);
(Ga 1+ , Cr 2+);	(Br 3+ , Si 4+);	(Y 3+ , Se 5+);
(Ga 1+ , Mn 2+);	(Br 3+ , Ge 4+);	(Y 3+ , Pb 5+);
(Ga 1+ , Fe 2+);	(Br 4+ , S 5+);	(Y 4+ , Ti 5+);

(Ga 1+ , Ge 2+);	(Br 4+ , Cl 5+);	(Y 4+ , Zn 5+);
(Ga 1+ , Mo 2+);	(Br 5+ , Sb 6+);	(Y 5+ , Co 6+);
(Ga 1+ , Ru 2+);	(Br 6+ , Ar 8+);	(Y 6+ , K 7+);
(Ga 1+ , Bi 2+);	(Kr 1+ , B 2+);	(Zr 2+ , P 2+);
(Ga 2+ , Rb 3+);	(Kr 1+ , S 2+);	(Zr 2+ , Ag 2+);
(Ga 2+ , Eu 4+);	(Kr 1+ , Br 2+);	(Zr 2+ , I 2+);
(Ga 2+ , Tm 4+);	(Kr 1+ , Xe 2+);	(Zr 2+ , Cs 2+);
(Ge 1+ , Mg 2+);	(Kr 1+ , Nd 3+);	(Zr 2+ , La 3+);
(Ge 1+ , Mn 2+);	(Kr 1+ , Pm 3+);	(Zr 2+ , Au 2+);
(Ge 1+ , Tc 2+);	(Kr 1+ , Tb 3+);	(Zr 2+ , Hg 2+);
(Ge 1+ , Sn 2+);	(Kr 2+ , Kr 3+);	(Nb 2+ , C 2+);
(Ge 1+ , Pb 2+);	(Kr 2+ , Tb 4+);	(Nb 2+ , K 2+);
(Ge 2+ , F 2+);	(Kr 3+ , O 3+);	(Nb 2+ , Zr 3+);
(Ge 2+ , Na 2+);	(Kr 3+ , Ni 4+);	(Nb 2+ , Eu 3+);
(Ge 2+ , Se 3+);	(Kr 3+ , Kr 4+);	(Nb 2+ , Tm 3+);
(Ge 2+ , Pd 3+);	(Kr 3+ , Nb 5+);	(Nb 2+ , Lu 3+);
(Ge 2+ , I 3+);	(Kr 4+ , Zr 5+);	(Nb 3+ , Kr 3+);
(Ge 3+ , V 5+);	(Kr 5+ , Sr 6+);	(Nb 3+ , Pr 4+);
(Ge 3+ , Se 5+);	(Kr 6+ , Y 7+);	(Nb 3+ , Tb 4+);
(Ge 3+ , Pb 5+);	(Rb 1+ , Nb 3+);	(Nb 4+ , N 4+);
(As 1+ , Sc 2+);	(Rb 2+ , Te 4+);	(Mo 1+ , Ba 2+);
(As 1+ , Y 2+);	(Rb 2+ , Sm 4+);	(Mo 1+ , Pr 2+);
(As 1+ , Zr 2+);	(Rb 2+ , Gd 4+);	(Mo 1+ , Nd 2+);
(As 1+ , Lu 2+);	(Rb 2+ , Dy 4+);	(Mo 1+ , Ra 2+);
(As 2+ , Co 3+);	(Rb 2+ , Ho 4+);	(Mo 2+ , Ru 3+);
(As 2+ , Ga 3+);	(Rb 2+ , Er 4+);	(Mo 2+ , Sn 3+);
(As 2+ , Ge 3+);	(Rb 3+ , Mg 3+);	(Mo 3+ , Cr 4+);
(As 2+ , Tl 3+);	(Rb 3+ , Te 5+);	(Mo 3+ , Ge 4+);
(As 3+ , Fe 4+);	(Rb 5+ , Rb 6+);	(Mo 4+ , Bi 5+);

(As 4+ , Sb 6+);	(Rb 6+ , Te 7+);	(Mo 5+ , Mn 6+);
(Se 1+ , Al 2+);	(Sr 1+ , Be 2+);	(Mo 6+ , O 6+);
(Se 1+ , Si 2+);	(Sr 1+ , Zn 2+);	(Mo 6+ , Cr 7+);
(Tc 1+ , Sr 2+);	(Sn 1+ , Er 2+);	(Pr 2+ , Xe 2+);
(Tc 1+ , La 2+);	(Sn 2+ , N 2+);	(Pr 2+ , Pr 3+);
(Tc 1+ , Ce 2+);	(Sn 2+ , Ar 2+);	(Pr 2+ , Nd 3+);
(Tc 1+ , Pm 2+);	(Sn 2+ , V 3+);	(Pr 2+ , Pm 3+);
(Tc 1+ , Sm 2+);	(Sn 2+ , Mo 3+);	(Pr 2+ , Gd 3+);
(Tc 1+ , Eu 2+);	(Sn 3+ , Mn 4+);	(Pr 2+ , Tb 3+);
(Tc 1+ , Tb 2+);	(Sn 3+ , Fe 4+);	(Nd 2+ , Sm 3+);
(Tc 1+ , Dy 2+);	(Sn 3+ , Co 4+);	(Nd 2+ , Dy 3+);
(Ru 1+ , Ca 2+);	(Sb 2+ , Ti 3+);	(Nd 2+ , Ho 3+);
(Ru 1+ , Eu 2+);	(Sb 2+ , Sb 3+);	(Nd 2+ , Er 3+);
(Ru 1+ , Tb 2+);	(Sb 2+ , Bi 3+);	(Nd 2+ , Lu 3+);
(Ru 1+ , Dy 2+);	(Sb 3+ , C 3+);	(Pm 2+ , C 2+);
(Ru 1+ , Ho 2+);	(Te 1+ , Sc 2+);	(Pm 2+ , K 2+);
(Ru 1+ , Er 2+);	(Te 1+ , Y 2+);	(Pm 2+ , Zr 3+);
(Rh 1+ , V 2+);	(Te 1+ , Gd 2+);	(Pm 2+ , Eu 3+);
(Rh 1+ , Nb 2+);	(Te 1+ , Tm 2+);	(Pm 2+ , Tm 3+);
(Rh 1+ , Sn 2+);	(Te 1+ , Yb 2+);	(Sm 2+ , Cl 2+);
(Rh 1+ , Hf 2+);	(Te 1+ , Lu 2+);	(Sm 2+ , Sc 3+);
(Pd 1+ , Al 2+);	(Te 2+ , Sc 3+);	(Sm 2+ , Yb 3+);
(Pd 1+ , Si 2+);	(Te 2+ , Kr 2+);	(Eu 2+ , Nb 3+);
(Pd 1+ , Fe 2+);	(Te 2+ , Yb 3+);	(Gd 2+ , Cl 2+);
(Pd 1+ , Co 2+);	(Te 2+ , Hf 3+);	(Gd 2+ , Sc 3+);
(Pd 1+ , Ru 2+);	(Te 3+ , Ar 3+);	(Gd 2+ , Eu 3+);
(Pd 1+ , In 2+);	(Te 3+ , La 4+);	(Gd 2+ , Yb 3+);
(Pd 1+ , Sb 2+);	(Te 3+ , Yb 4+);	(Tb 2+ , B 2+);
(Pd 1+ , Bi 2+);	(Te 4+ , Bi 5+);	(Tb 2+ , S 2+);

(Ag 1+ , Cu 2+);
(Ag 1+ , As 2+);
(Ag 1+ , Ag 2+);
(Ag 1+ , Cs 2+);
(Ag 1+ , Hg 2+);
(Cd 1+ , Zn 2+);
(Cd 1+ , Ga 2+);
(Cd 1+ , Cd 2+);
(Cd 1+ , Tl 2+);
(In 1+ , Sc 2+);
(In 1+ , Y 2+);
(In 1+ , Yb 2+);
(In 1+ , Lu 2+);
(In 2+ , Sr 3+);
(In 2+ , Cd 3+);
(Sn 1+ , Ca 2+);
(Sn 1+ , Sr 2+);
(Sn 1+ , La 2+);
(Sn 1+ , Sm 2+);
(Sn 1+ , Eu 2+);
(Sn 1+ , Tb 2+);
(Sn 1+ , Dy 2+);
(Sn 1+ , Ho 2+);
(Lu 2+ , Hf 3+);
(Hf 2+ , As 2+);
(Hf 2+ , Ag 2+);
(Hf 2+ , I 2+);
(Hf 2+ , Cs 2+);
(Hf 2+ , Hg 2+);
(I 1+ , Al 2+);
(I 1+ , Si 2+);
(I 1+ , Fe 2+);
(I 1+ , Co 2+);
(I 1+ , Ge 2+);
(I 1+ , Ru 2+);
(I 1+ , In 2+);
(I 1+ , Bi 2+);
(Xe 1+ , Al 2+);
(Xe 1+ , Co 2+);
(Xe 1+ , Ni 2+);
(Xe 1+ , Rh 2+);
(Xe 1+ , Cd 2+);
(Xe 1+ , Sb 2+);
(La 2+ , Ti 3+);
(La 2+ , Sb 3+);
(Ce 2+ , Ag 2+);
(Ce 2+ , I 2+);
(Ce 2+ , Cs 2+);
(Ce 2+ , Au 2+);
(Ce 2+ , Hg 2+);
(Pr 2+ , B 2+);
(Pr 2+ , Y 3+);
(Pb 2+ , As 3+);
(Pb 2+ , In 3+);
(Pb 2+ , Te 3+);
(Pb 2+ , Pb 3+);
(Pb 3+ , Br 4+);
(Bi 1+ , Ba 2+);
(Tb 2+ , Br 2+);
(Tb 2+ , Xe 2+);
(Tb 2+ , Sm 3+);
(Tb 2+ , Tb 3+);
(Tb 2+ , Dy 3+);
(Tb 2+ , Ho 3+);
(Tb 2+ , Er 3+);
(Dy 2+ , Cl 2+);
(Dy 2+ , K 2+);
(Dy 2+ , Zr 3+);
(Dy 2+ , Eu 3+);
(Dy 2+ , Yb 3+);
(Ho 2+ , Sc 3+);
(Ho 2+ , Yb 3+);
(Ho 2+ , Hf 3+);
(Er 2+ , Sc 3+);
(Er 2+ , Yb 3+);
(Er 2+ , Hf 3+);
(Tm 2+ , Kr 2+);
(Tm 2+ , Nb 3+);
(Tm 2+ , Hf 3+);
(Yb 2+ , Ti 3+);
(Lu 2+ , Kr 2+);
(Tl 1+ , Mg 2+);
(Tl 1+ , Mn 2+);
(Tl 1+ , Mo 2+);
(Tl 1+ , Tc 2+);
(Tl 1+ , Sn 2+);
(Tl 1+ , Pb 2+);

(Hg 1+ , Al 2+);
(Hg 1+ , Si 2+);
(Hg 1+ , Co 2+);
(Hg 1+ , Ni 2+);
(Hg 1+ , Rh 2+);
(Hg 1+ , Cd 2+);
(Hg 1+ , In 2+);
(Hg 1+ , Sb 2+);
(Bi 2+ , Ar 2+);
(Bi 2+ , Mo 3+);
(Bi 3+ , Se 4+);
(Bi 3+ , Mo 4+);
(Bi 3+ , Pb 4+);
(Bi 4+ , P 5+);
(Bi 4+ , Kr 5+);
(Bi 4+ , Zr 5+);
(Pb 1+ , Sc 2+);
(Pb 1+ , Y 2+);
(Pb 1+ , Lu 2+); and
(Pb 2+ , Fe 3+).

294. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming said hydrino atoms from hydrogen atoms by use of a catalyst comprising at least one free atom selected from the group consisting of Be, Cu, Zn, Pd, Te and Pt.

295. (Previously Presented) A method according to any one of claims 214 to 216, further comprising forming hydrino atoms from hydrogen atoms by use of a catalyst comprising at least one set of two species selected from the group consisting of:

(Li 0+ , Ar 5+);
(Li 0+ , Mo 6+);
(Be 0+ , Kr 5+);
(B 0+ , Sc 3+);
(B 0+ , Zr 3+);
(B 0+ , Yb 3+);
(C 0+ , Te 3+);
(C 0+ , Tl 3+);
(N 0+ , Ag 3+);
(N 0+ , Cd 3+);
(N 0+ , Hg 3+);
(P 1+ , Nd 4+);
(P 1+ , Tb 4+);
(P 3+ , Na 5+);
(S 0+ , Sm 3+);
(S 0+ , Dy 3+);
(S 0+ , Ho 3+);
(S 0+ , Er 3+);
(S 0+ , Lu 3+);
(S 1+ , Nb 4+);
(S 1+ , Ho 4+);
(S 1+ , Er 4+);
(Ti 2+ , As 5+);
(Ti 2+ , Se 5+);
(V 1+ , Cd 3+);
(V 1+ , I 3+);
(V 1+ , Hg 3+);
(V 2+ , Kr 4+);
(V 2+ , Nb 5+);
(V 4+ , Ni 7+);
(V 4+ , Kr 8+);
(Cr 1+ , S 3+);
(Cr 1+ , Ca 3+);

(N 1+ , Bi 5+); (S 1+ , Tm 4+); (Cr 3+ , Be 3+);
(N 2+ , Br 6+); (S 2+ , Bi 5+); (Cr 3+ , Zn 5+);
(N 2+ , Kr 6+); (Cl 0+ , Ti 3+); (Cr 5+ , Cu 8+);
(O 0+ , Cl 3+); (Cl 1+ , Mo 4+); (Mn 1+ , Nd 4+);
(O 0+ , Kr 3+); (Cl 1+ , Pb 4+); (Mn 1+ , Tb 4+);
(O 0+ , Sm 4+); (Cl 3+ , Sc 5+); (Mn 2+ , Ca 4+);
(O 0+ , Dy 4+); (Cl 4+ , Br 7+); (Mn 3+ , Nb 6+);
(O 2+ , Na 4+); (Ar 0+ , Mn 3+); (Mn 5+ , Ca 8+);
(O 2+ , Cl 6+); (Ar 0+ , As 3+); (Fe 1+ , Nd 4+);
(O 2+ , Mn 6+); (Ar 0+ , Rh 3+); (Fe 1+ , Pm 4+);
(O 3+ , Al 5+); (Ar 0+ , Tl 3+); (Fe 1+ , Tb 4+);
(F 0+ , Bi 4+); (Ar 1+ , Mn 4+); (Fe 3+ , Ne 4+);
(F 1+ , Mn 5+); (Ar 1+ , In 4+); (Fe 5+ , Mo 8+);
(F 3+ , Mg 5+); (Ar 5+ , Mg 5+); (Co 1+ , Pm 4+);
(F 4+ , Ti 8+); (K 0+ , Al 3+); (Co 2+ , C 4+);
(Ne 1+ , Ge 5+); (K 0+ , Cr 3+); (Co 3+ , Mg 4+);
(Ne 4+ , Al 6+); (K 0+ , Pb 3+); (Ni 1+ , La 4+);
(Na 0+ , Cr 4+); (K 1+ , Sc 4+); (Ni 1+ , Yb 4+);
(Na 0+ , Ge 4+); (K 2+ , Cl 5+); (Ni 1+ , Lu 4+);
(Na 1+ , Sc 5+); (Ca 0+ , Eu 3+); (Ni 2+ , K 4+);
(Na 1+ , Bi 6+); (Ca 0+ , Dy 3+); (Ni 5+ , Fe 8+);
(Na 3+ , Ne 6+); (Ca 0+ , Ho 3+); (Cu 0+ , Ce 3+);
(Na 4+ , Ne 7+); (Ca 0+ , Er 3+); (Cu 0+ , Pr 3+);
(Mg 0+ , Kr 3+); (Ca 1+ , Mg 3+); (Cu 1+ , Ar 3+);
(Mg 2+ , Al 5+); (Ca 1+ , Fe 4+); (Cu 1+ , Ti 4+);
(Mg 3+ , Na 6+); (Ca 1+ , Co 4+); (Cu 1+ , Te 4+);
(Al 1+ , Zr 5+); (Ca 3+ , Co 6+); (Cu 2+ , Sn 5+);
(Al 3+ , Mg 6+); (Ca 3+ , Y 6+); (Zn 0+ , Y 3+);
(Al 3+ , Cr 8+); (Sc 1+ , C 3+); (Zn 0+ , Pm 3+);

(Si 1+ , Zn 3+); (Sc 1+ , Te 4+); (Zn 0+ , Gd 3+);
(Si 1+ , Ce 4+); (Ti 1+ , Mn 3+); (Zn 0+ , Tb 3+);
(Si 2+ , Na 4+); (Ti 1+ , Ga 3+); (Zn 1+ , Mo 4+);
(Si 2+ , Cl 6+); (Ti 1+ , As 3+); (Zn 1+ , Pb 4+);
(Si 3+ , Be 4+); (Ti 1+ , Rh 3+); (Zn 2+ , N 4+);
(Si 5+ , N 6+); (Ti 1+ , Tl 3+); (Zn 2+ , Kr 5+);
(Zn 3+ , N 5+); (Y 5+ , Co 7+); (Ce 1+ , Ho 3+);
(Zn 5+ , Co 8+); (Zr 1+ , Zr 3+); (Ce 1+ , Er 3+);
(Ga 1+ , Bi 4+); (Zr 2+ , Sc 4+); (Ce 1+ , Lu 3+);
(Ge 1+ , S 3+); (Zr 2+ , Sr 4+); (Pr 1+ , Sc 3+);
(Ge 1+ , Ce 4+); (Nb 1+ , Mo 3+); (Pr 1+ , Zr 3+);
(As 1+ , Ca 3+); (Nb 1+ , Sb 3+); (Pr 1+ , Yb 3+);
(As 1+ , Br 3+); (Nb 1+ , Bi 3+); (Nd 1+ , Nb 3+);
(As 2+ , F 3+); (Nb 2+ , Sn 4+); (Nd 1+ , Hf 3+);
(As 2+ , Kr 4+); (Nb 2+ , Sb 4+); (Pm 1+ , Nb 3+);
(As 2+ , Nb 5+); (Nb 3+ , Co 5+); (Sm 1+ , Ti 3+);
(Se 1+ , Zn 3+); (Nb 3+ , Rb 5+); (Eu 1+ , V 3+);
(Se 1+ , Ce 4+); (Nb 4+ , Zn 6+); (Eu 1+ , Mo 3+);
(Se 2+ , Kr 4+); (Mo 1+ , Se 3+); (Eu 1+ , Sb 3+);
(Se 2+ , Nb 5+); (Mo 1+ , I 3+); (Gd 1+ , Bi 3+);
(Se 3+ , Ni 5+); (Mo 4+ , Fe 6+); (Tb 1+ , Hf 3+);
(Se 4+ , Nb 7+); (Mo 5+ , Rb 8+); (Dy 1+ , Ti 3+);
(Br 0+ , Eu 3+); (Ag 0+ , La 3+); (Ho 1+ , Bi 3+);
(Br 0+ , Tm 3+); (Ag 0+ , Ce 3+); (Er 1+ , Bi 3+);
(Br 1+ , Nb 4+); (Cd 0+ , La 3+); (Tm 1+ , V 3+);
(Br 1+ , Gd 4+); (In 1+ , Nd 4+); (Tm 1+ , Mo 3+);
(Br 1+ , Ho 4+); (In 1+ , Tb 4+); (Tm 1+ , Sb 3+);
(Br 1+ , Er 4+); (Sn 1+ , Si 3+); (Yb 1+ , Al 3+);
(Br 2+ , F 3+); (Sn 1+ , Co 3+); (Yb 1+ , Ru 3+);

(Br 2+ , Ga 4+);
(Br 3+ , O 4+);
(Br 3+ , Al 4+);
(Br 4+ , N 5+);
(Kr 0+ , Ti 3+);
(Kr 1+ , Sn 4+);
(Kr 1+ , Sb 4+);
(Kr 2+ , Ne 3+);
(Kr 2+ , Bi 5+);
(Kr 3+ , O 4+);
(Kr 3+ , Al 4+);
(Kr 4+ , Ar 6+);
(Rb 0+ , Sc 3+);
(Rb 0+ , Zr 3+);
(Rb 0+ , Yb 3+);
(Rb 1+ , N 3+);
(Sr 1+ , C 3+);
(Sr 1+ , Ar 3+);
(Sr 1+ , Ti 4+);
(Sr 1+ , Te 4+);
(Sr 3+ , Nb 6+);
(Sn 1+ , Ge 3+);
(Sn 2+ , F 3+);
(Sn 2+ , Ga 4+);
(Sb 1+ , Si 3+);
(Sb 1+ , Co 3+);
(Sb 1+ , Ge 3+);
(Sb 2+ , As 4+);
(Te 1+ , Mn 3+);
(Te 1+ , As 3+);
(Te 1+ , Rh 3+);
(Te 1+ , Te 3+);
(Te 1+ , Tl 3+);
(Te 2+ , Cr 4+);
(Te 2+ , Ge 4+);
(Te 2+ , As 4+);
(Te 3+ , Zr 5+);
(Te 4+ , Ni 6+);
(Te 4+ , Cu 6+);
(Xe 0+ , Pr 3+);
(Xe 0+ , Nd 3+);
(La 1+ , Tc 3+);
(Yb 1+ , In 3+);
(Yb 1+ , Sn 3+);
(Lu 1+ , Tc 3+);
(Lu 1+ , Ru 3+);
(Lu 1+ , In 3+);
(Lu 1+ , Sn 3+);
(Hf 1+ , Sc 3+);
(Hf 1+ , Yb 3+);
(Hg 0+ , La 3+);
(Pb 1+ , Ni 3+);
(Pb 1+ , Se 3+);
(Pb 2+ , F 3+);
(Pb 2+ , Ga 4+);
(Bi 1+ , P 3+);
(Bi 1+ , Sr 3+);
(La 1+ , Ru 3+);
(La 1+ , In 3+);
(La 1+ , Sn 3+);
(Ce 1+ , Sm 3+); and
(Ce 1+ , Dy 3+).

296. (Previously Presented) A method of making a compound comprising reacting hydrino atoms to form dihydrino molecules and reacting said dihydrino molecules with at least one other element to form said compound.

297. (Previously Presented) A method of making a compound comprising reacting hydrino atoms with at least one other element to form said compound.

298. (Previously Presented) A method according to claim 297, further comprising reacting hydrino atoms with protons to form dihydrino molecular ions, and reacting said dihydrino molecular ions with said at least one other element to form said compound.

299. (Previously Presented) A method according to claim 296, further comprising reacting dihydrino molecules react with protons to form trihydrino molecular ions, and reacting said trhydrino molecular ions with said at least one other element to form said compound.

300. (Previously Presented) A compound comprising at least one increased binding energy hydride ion having a binding energy greater than 0.8 eV and at least one other element, wherein the compound is selected from the group consisting of KHF, KHCl, KHBr, KHI, RbHF, RrHCL, RbHBr, RbHI, CsHF, CsHCL, CsHBr, CsHI, CaHCl, CaHBr, CaHI, SrHF, SrHCL. SrHBr, and SiH.

301. (New) A compound according to claim 65, where in the compound comprises LiH.